PATENT

Docket No.: 10014769-2
Appl. Ser. No.: 10/696,999

IN THE CLAIMS:

Please find below a listing of all of the pending claims. The statuses of the claims are set forth in parentheses.

1-9. (Canceled).

10. (Original) A method of cooling a plurality of heat generating components of an electronic system having an enclosure and a plenum located within said enclosure, said method comprising:

activating at least one variable speed blower and a plurality of valves, each of said valves terminating substantially close to a respective heat generating component, to thereby supply cooling fluid to said heat generating components;

sensing the temperatures of each of said heat generating components;

determining whether said sensed temperatures are within a predetermined temperature range; and

varying said supply of said cooling fluid to said heat generating components in response to said sensed temperatures falling outside of said predetermined temperature range.

11. (Previously Presented) The method according to claim 10, further comprising:

determining whether the measured temperatures of said heat generating components are each below or equal to a predetermined minimum set point temperature.

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12. (Previously Presented) The method according to claim 21, further comprising:

decreasing the speed of said at least one blower in response to said decreasing cooling

fluid supply to said heat generating components exceeding said increasing cooling fluid

supply to said heat generating components.

13. (Previously Presented) The method according to claim 22, further comprising:

increasing the speed of said at least one blower in response to said decreasing cooling

fluid supply to said heat generating components falling below said increasing cooling fluid

supply to said heat generating components.

14-20. (Canceled).

21. (Previously Presented) The method according to claim 11, further comprising:

decreasing the supply of said cooling fluid to said heat generating components for

those heat generating components having measured temperatures that fall below or equal said

predetermined minimum set point temperature.

22. (Previously Presented) The method according to claim 11, further comprising:

increasing the supply of said cooling fluid to said heat generating components for

those heat generating components having measured temperatures that exceed said

predetermined minimum set point temperature.

23. (Previously Presented) The method according to claim 10, further comprising:

supplying the plenum with cooling fluid with the at least one variable speed blower

prior to supplying the cooling fluid to said heat generating components; and

substantially maintaining a portion of the cooling fluid at a substantially uniform

pressure.

24. (Previously Presented) The method according to claim 10, wherein the step of

sensing the temperatures of each of said heat generating components comprises detecting the

temperatures with one or more temperature sensors.

25. (Previously Presented) The method according to claim 10, wherein the step of

sensing the temperatures of each of said heat generating components comprises anticipating

the temperatures of each of said heat generating components based upon an impending load

on each of the heat generating components.

26. (Withdrawn) A computer readable storage medium on which is embedded one or

more computer programs, said one or more computer programs implementing a method for

cooling a plurality of heat generating components of an electronic system having an

enclosure and a plenum located within said enclosure, said one or more computer programs

comprising a set of instructions for:

activating at least one variable speed blower and a plurality of valves, each of said

valves terminating substantially close to a respective heat generating component, to thereby

supply cooling fluid to said heat generating components;

sensing the temperatures of each of said heat generating components;

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determining whether said sensed temperatures are within a predetermined temperature

range; and

varying said supply of said cooling fluid to said heat generating components in

response to said sensed temperatures falling outside of said predetermined temperature range.

27. (Withdrawn) The computer readable storage medium according to claim 26, said

one or more computer programs further comprising a set of instructions for:

determining whether the measured temperatures of said heat generating components

are each below or equal to a predetermined minimum set point temperature.

28. (Withdrawn) The computer readable storage medium according to claim 27, said

one or more computer programs further comprising a set of instructions for:

decreasing the supply of said cooling fluid to said heat generating components for

those heat generating components having measured temperatures that fall below or equal said

predetermined minimum set point temperature

29. (Withdrawn) The computer readable storage medium according to claim 27, said

one or more computer programs further comprising a set of instructions for:

increasing the supply of said cooling fluid to said heat generating components for

those heat generating components having measured temperatures that exceed said

predetermined minimum set point temperature.

30. (Withdrawn) The computer readable storage medium according to claim 27, said one or more computer programs further comprising a set of instructions for:

manipulating the speed of said at least one blower in response to said varying said supply of said cooling fluid to said heat generating components in response to said sensed temperatures falling outside of said predetermined temperature range.

31. (Withdrawn) The computer readable storage medium according to claim 26, said one or more computer programs further comprising a set of instructions for:

supplying the plenum with cooling fluid with the at least one variable speed blower prior to supplying the cooling fluid to said heat generating components; and

substantially maintaining a portion of the cooling fluid at a substantially uniform pressure.

32. (Withdrawn) The computer readable storage medium according to claim 26, said one or more computer programs further comprising a set of instructions for:

anticipating the temperatures of each of said heat generating components based upon an impending load on each of the heat generating components.

33. (New) The method according to claim 1, wherein a plurality of nozzles are provided along the plenum and wherein the plurality of valves are positioned along the plurality of nozzles, and wherein the step of varying said supply of said cooling fluid comprises varying the supply of cooling fluid through one or more of the plurality of nozzles by manipulating one or more of the plurality of valves.

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34. (New) The method according to claim 1, wherein the electronic system comprises a computer system and the heat generating components comprise one or more of processors, micro-controllers, high speed video cards, disk drives, and semi-conductor devices.

35. (New) A method for cooling a heat generating component, said heat generating component being housed in a computer system, said method comprising:

causing cooling fluid to flow through a plenum, wherein a variable speed blower is positioned to vary the cooling fluid flow through the plenum, and wherein a nozzle is positioned along the plenum;

causing cooling fluid to flow from the plenum and through the nozzle, wherein a valve is positioned along the nozzle to control the cooling fluid flow through the nozzle;

delivering cooling fluid from the nozzle to the heat generating component, wherein the heat generating component is positioned to directly receive the cooling fluid from the nozzle;

sensing the temperature of the heat generating component;

determining whether the sensed temperature is within a predetermined temperature range; and

varying the supply of said cooling fluid to the heat generating component in response to the sensed temperature falling outside of the predetermined temperature range.

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36. (New) The method according to claim 35, further comprising:

supplying the plenum with cooling fluid with the at least one variable speed blower prior to supplying the cooling fluid to said heat generating component; and

substantially maintaining a portion of the cooling fluid at a substantially uniform pressure.

37. (New) The method according to claim 35, wherein the step of sensing the temperatures of the heat generating component comprises anticipating the temperature of the heat generating component based upon an impending load on the heat generating component.